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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR        | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|-----------------------------|---------------------|------------------|
| 10/582,783  | 06/13/2006  | Koji Moriyama               | 291921US0PCT        | 5030             |
| 22850 7590 11/17/2008<br>OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C.<br>1940 DUKE STREET<br>ALEXANDRIA, VA 22314 |             |                             |                     |                  |
| EXAMINER<br>HAUTH, GALEN H  |             |                             |                     |                  |
| ART UNIT<br>1791  |             | PAPER NUMBER                |                     |                  |
| NOTIFICATION DATE<br>11/17/2008   |             | DELIVERY MODE<br>ELECTRONIC |                     |                  |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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### Office Action Summary

**Application No.**

10/582,783

**Applicant(s)**

MORIYAMA ET AL.

**Examiner**

GALEN HAUTH

**Art Unit**

1791

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 October 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-2 and 4-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 2 and 4-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/CDC)
- Paper No(s) Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s) Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Response to Amendment***

1. Acknowledgement is made to applicant's amendment of claim 1 to incorporate the limitation of claim 3 which is canceled. No new matter has been added. As such the rejection of claims 1 and 7 under 35 U.S.C. 102(b) by Chu is withdrawn due to amendment.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 1-2, 4 and 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chu (PN 4877840) in view of Minami et al. (Pub No 2003/0069320).

- a. With regards to claim 1, Chu teaches a method for making a polyolefin particulate by blending molten polyolefin with a modifying agent, cooling the resin to a temperature below the melting temperature of the polyolefin while still

mixing, and extruding the blend as pellets in crumble form (abstract). The polyolefin is melted in the first section of the extruder (col 4 ln 5-8). Chu teaches that the polyolefin is formed from an alpha olefin with 2-10 carbon atoms (col 2 ln 18-20.) Chu fails to teach the properties of the polyolefin or the polymerization techniques used to create the polyolefin.

b. Minami teaches a 1-butene (4 carbon atoms) based polymer having superior flexibility, low stickiness, and transparency formed with a melting point between 0-100 degrees Celsius with a stereo regularity index of at most 20 defined by  $\{(mmmm)/(mmrr+mmr)\}$  (abstract). The 1-butene based copolymer taught by Minami is formed from an alpha olefin having 3 to 20 carbon atoms (¶ 0038). The polymer is polymerized using a metallocene catalyst (¶ 0202). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the polyolefin taught by Minami in the process taught by Chu to develop a granule with superior flexibility, low stickiness, and transparency (abstract) as well as superior mechanical strength, high heat resistance, and low price (¶ 0006).

c. With regards to claim 2 with respect to claim 1 above, Chu teaches that the extruder varies in temperature from 200 degrees Celsius in the first zone at the beginning of the extruder to 65 degrees Celsius in the cooling zone at the end of the extruder (col 6 ln 17-18), but failed to positively teach a cooling rate of 5-300 °C/min. However, absent any showing of unexpected benefit, the cooling rate claimed by the applicant would have been obvious in the art as such is taken

to be a **result effective variable**, and would have been routinely optimized by those versed in the art.

- d. With regards to claim 4, Table 3 on page 33 shows Example 14 of the 1-butene based polymer has a melting point of 69.9 degree Celsius and a crystallization time of 8 minutes.
  - e. With regards to claim 6, Table 3 on page 33 shows Example 14 of the 1-butene based polymer has a stereo regularity index ((mmmm)/(mmrr+rmmr)) of 10.
  - f. With regards to claim 7, Chu teaches forming particulate from the flexible polyolefin through the process described above (col 5 example 1).
5. Claims 1-2, 5, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chu (PN 4877840) in view of Miller (PN 6469188).
- a. With regards to claim 1, Chu teaches a method for making a polyolefin particulate by blending molten polyolefin with a modifying agent, cooling the resin to a temperature below the melting temperature of the polyolefin while still mixing, and extruding the blend as pellets in crumble form (abstract). The polyolefin is melted in the first section of the extruder (col 4 ln 5-8). Chu teaches that the polyolefin is formed from an alpha olefin with 2-10 carbon atoms (col 2 ln 18-20.) Chu fails to teach the properties of the polyolefin or the polymerization techniques used to create the polyolefin.
  - b. Miller teaches a polyolefin system producing elastomeric polypropylene (abstract) which is useful for its utility and properties of recyclability, chemical

resistivity, thermal stability, electrical conductivity, optical transparency, and processability (col 9 ln 47-51). The elastomeric polyolefin produced by Miller is attainable from alpha olefins with 3 to 10 carbons (col 2 ln 27-29, a alk-1-ene is a alpha olefin) with a metallocene (abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the polyolefin of Miller in the polyolefin process of Chu for the reasons stated prior including increased processability.

c. With regards to claim 2 with respect to claim 1 above, Chu teaches that the extruder varies in temperature from 200 degrees Celsius in the first zone at the beginning of the extruder to 65 degrees Celsius in the cooling zone at the end of the extruder (col 6 ln 17-18), but failed to positively teach a cooling rate of 5-300 °C/min. However, absent any showing of unexpected benefit, the cooling rate claimed by the applicant would have been obvious in the art as such is taken to be a **result effective variable**, and would have been routinely optimized by those versed in the art.

d. With regards to claim 5, the elastomeric polypropylene produced by Miller in Example 48 col 43-44 displayed in Table 5 shows that entry 9 is a polypropylene with a (mm) of 76.7% by mole by adding the percentage of all groups containing the pattern mm.

e. With regards to claim 7, Chu teaches forming particulate from the flexible polyolefin through the process described above (col 5 example 1).

***Response to Arguments***

6. Applicant's arguments with respect to claims 1 and 7 rejected under 102(b) by Chu and claim 2 rejected under 103(a) by Chu have been considered but are moot in view of the new ground(s) of rejection.

7. Applicant's arguments filed 10/14/2008 have been fully considered but they are not persuasive.

a. Applicant argues that the references of Chu and Minami do not present a valid combination because one of ordinary skill in the art at the time the invention was made would not expect the polymer of Minami to be workable with the method of Chu. This argument is not found persuasive. The polymer of Minami comprises a 1-butene polymer that is an alpha olefin of 4 carbon atoms which is within the teachings of Chu (col 2 ln 18-20 Chu teaches the use of an alpha olefin with 2-10 carbon atoms). There is no evidence provided that suggests that the polymer of Minami would not work properly in combination with the method of Chu. The rejection is therefor not persuasive.

b. Applicant argues that the references of Chu and Miller do not present a valid combination because one of ordinary skill in the art at the time the invention was made would not expect the polymer of Miller to be workable with the method of Chu. This argument is not found persuasive. The polymer of Miller comprises a polypropylene formed from alpha olefins of 3-10 carbon atoms which is within the teachings of Chu (col 2 ln 18-20 Chu teaches the use of an alpha olefin with 2-10 carbon atoms). There is no evidence provided that suggests that the

polymer of Miller would not work properly in combination with the method of Chu. The rejection is therefor not persuasive.

c. Applicant has argued that the method of Chu does not meet certain claim requirements, because the polymer used by applicant maintains flowability in a super cooled state so as to not crystallize for the first time until after extrusion from the kneader (page 5 of the response of 10/14/2008). The claims as written do not require this limitation.

### ***Conclusion***

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to GALEN HAUTH whose telephone number is (571)270-



5516. The examiner can normally be reached on Monday to Thursday 8:30am-5:00pm ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on (571)272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/GHH/

/Christina Johnson/  
Supervisory Patent Examiner, Art Unit 1791